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EXAMINER

CROWELL, ANNA M

ART UNIT

PAPER NUMBER

1763

DATE MAILED: 07/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/052,538

Applicant(s)

KAJI ET AL.

Examiner

Michelle Crowell

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 32-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 32-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on January 23, 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 08/808805.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>g</u> . | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the **voltage suppressing means** must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 32-40 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Lines 2-3 of claim 32 recites the limitation, "a gap between the electrodes between 8 mm and 50 mm. There is no support for a gap distance **less than 10 mm** in the original specification. On page 27, line 25 – page 28, line 2 of the specification, the specification supports a gap

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between the electrodes between **30 mm and 300 mm**. Additionally, lines 9-10 of originally filed claim 17 supports a gap between **10 mm and 50 mm**.

Lines 3-4 of claim 34 recites the limitation, “a gap between the electrodes between 8 mm and 50 mm. There is no support for a gap distance **less than 10 mm** in the original specification. On page 27, line 25 – page 28, line 2 of the specification, the specification supports a gap between the electrodes between **30 mm and 300 mm**. Additionally, lines 9-10 of originally filed claim 17 supports a gap between **10 mm and 50 mm**.

Furthermore, it is noted that the limitation, “a gap between the electrodes between 10 mm and 50 mm” in the original claims, is not fully supported by the specification since specification supports a gap between the electrodes is from 30 – 300 mm. It is suggested to either amend the claims or the specification to fully support one another.

Lines 13-14 of claim 32 recites the limitation, “a bias voltage having a frequency of 500 kHz to 10 MHz to the sample”. There is no support for this claimed frequency range in the original specification. On page 50, line 10, the specification supports a bias voltage having a frequency between 0.2 MHz to 5 MHz.

Lines 8-9 of claim 34 32 recites the limitation, “a bias voltage having a frequency of 500 kHz to 10 MHz to the sample”. There is no support for this claimed frequency range in the original specification. On page 50, line 10, the specification supports a pulse bias voltage having a frequency between 0.2 MHz to 5 MHz.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 33 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Lines 3-9, describes the voltage suppressing means using process (method) terminology.

The structure of the voltage suppressing means is unclear. Apparatus claims must be defined in terms of structure rather than function.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 32 is rejected under 35 U.S.C. 102(b) as being anticipated by Sakamoto et al. (U.S. 5,698,062).

Referring to Figure 1, column 4, line 55 – column 6, line 18, Sakamoto et al. discloses a plasma processing apparatus comprising: a pair of electrodes 21 and 5 opposite to each other having a gap between the electrodes between 15 mm and 20 mm (col. 5, lines 20-21); an electrostatic attracting means 11 for holding a sample W onto one of said electrodes 5 by an electrostatic force (col. 5, lines 7-12); a gas introducing means 26 for introducing an etching gas into an environment holding the sample (col. 5, lines 30-35); an evacuating means 31 for evacuating and depressurizing the environment to a pressure condition of 1.33 Pa to 39.99 Pa

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(col. 5, lines 36-45); a plasma generating means 51 for forming the etching gas into a plasma under the pressure condition by a high frequency electric power of 10-100 MHz (col. 6, lines 12-15); and a bias applying means 41 for applying a bias voltage having a frequency of 10 KHz to 5 MHz to one of the electrodes 5 mounting the sample W (col. 5, line 58-col. 6, line 6); thus an insulator film in the samples W being plasma processed (col. 6, lines 16-18).

Regarding the limitation of "etching gas", the type of gas used in apparatus claims is considered intended use and therefore is of no significance in determining patentability. Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim. *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, the apparatus of Sakamoto et al. is capable of providing an etching gas to the sample.

Regarding the limitation of "a pressure condition of 0.5 Pa to 4.0 Pa", this is considered intended use and therefore is of no significance in determining patentability. The apparatus of Sakamoto et al. is capable of providing a pressure condition of 0.5 Pa to 4.0 Pa e.

Regarding the limitation of "an insulator film in the sample", this is considered intended use and therefore is of no significance in determining patentability. The inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." In *re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963). Moreover, the apparatus of Sakamoto et al. is capable of processing an insulator film in the sample.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iimuro et al. (Japanese Patent Publication 06-333850) in view of Arai et al. (Japanese Patent Publication 06-338476).

Referring to Drawing 1, paragraphs [0010], [0015], [0020], [0022], [0032]-[0033], Iimuro et al. discloses a plasma processing apparatus comprising: a pair of electrodes 20 and 22 opposite to each other having a gap between the electrodes between 20 mm and 30 mm (par. [0010]); a gas introducing means 68 for introducing an etching gas into an environment holding the sample W (par. [0022]); an evacuating means 86 for evacuating and depressurizing the environment to a pressure condition (par. [0020]); a plasma generating means 58 for forming the etching gas into a plasma under the pressure condition by a high frequency electric power of 10-

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100 MHz (par. [0015], [0022], [0032]); and a bias applying means 32 for applying a bias voltage having a frequency of 10 KHz to 5 MHz to one of the electrodes 22 mounting the sample W (par. [0022], [0032]); thus an insulator film in the samples W being plasma processed (par. [0022]).

In addition, since the frequency of both the plasma generating means and the bias applying means is adjustable, the apparatus is capable of providing the plasma generating means with a frequency between 10-100 MHz and a bias applying means with a frequency between 10 KHz to 5 MHz.

Regarding the limitation of "etching gas", the type of gas used in apparatus claims is considered intended use and therefore is of no significance in determining patentability. Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim. *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, the apparatus of Iimuro et al. is capable of providing an etching gas to the sample.

Regarding the limitation of "a pressure condition of 0.5 Pa to 4.0 Pa", this is considered intended use and therefore is of no significance in determining patentability. The apparatus of Iimuro et al. is capable of providing a pressure condition of 0.5 Pa to 4.0 Pa.

Regarding the limitation of "an insulator film in the sample", this is considered intended use and therefore is of no significance in determining patentability. The inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." In *re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963). Moreover, the apparatus of Iimuro et al. is capable of processing an insulator film in the sample.

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Iimuro et al. fails to teach an electrostatic attracting means.

Referring to Drawing 1 and paragraph [0029]-[0035], Arai et al. teaches a plasma processing apparatus comprising an electrode 8, an electrostatic attracting means 31, a gas introducing means 45, an evacuating means 4, and a bias applying means 21 and 22.

Specifically, Arai et al. teaches that it is conventional in the art to place an electrostatic chuck on the wafer holder in order to hold the wafer by electrostatic attracting force [0034]. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide an electrostatic chuck on the support table of Iimuro et al. as taught by Arai et al. because it is conventional and a well-known alternative to hold a wafer by electrostatic force.

Iimuro et al. fails to teach a voltage suppression means.

Referring to paragraphs [0039]-[0045], Arai et al. teaches a voltage suppressing means that prevents voltage charge up by pulsing the wafer. By providing a voltage suppressing means to the power source, the device is prevented from deterioration (par. [0040]). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the voltage suppressing means of Arai et al. to the apparatus of Iimuro et al. since this would prevent the device from deteriorating.

11. Claim 34 rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al. (U.S. 5,698,062) in view of Ishizuka et al. (U.S. 5,476,182).

The teachings of Sakamoto et al. have been discussed above.

Sakamoto et al. fails to teach a radical generating plasma supplying means.

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Referring to Figure 5, column 5, lines 14-45, and column 6, line 43-column 7, line 55, Ishizuka et al. discloses a plasma processing apparatus, which includes: a radical generating plasma supplying means 10 for forming a first gas for generating radicals at a pressure of more than 100 mTorr into a plasma in advance and for supplying a required amount of the radicals to the vacuum processing chamber 12. By providing a radical generating plasma supplying means to the processing chamber, the processing rate is increased. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the apparatus of Sakamoto et al. with a radical generating plasma supplying means as taught by Ishizuka et al. in order to increase the processing rate.

12. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iimuro et al. (Japanese Patent Publication 06-333850) in view of Arai et al. (Japanese Patent Publication 06-338476) as applied to claim 32-33 above, and further in view of Ishizuka et al. (U.S. 5,476,182).

The teachings of Iimuro et al. in view of Arai et al. have been discussed above.

Iimuro et al. in view of Arai et al. fail to teach a radical generating plasma supplying means.

Referring to Figure 5, column 5, lines 14-45, and column 6, line 43-column 7, line 55, Ishizuka et al. discloses a plasma processing apparatus, which includes: a radical generating plasma supplying means 10 for forming a first gas for generating radicals at a pressure of more than 100 mTorr into a plasma in advance and for supplying a required amount of the radicals to the vacuum processing chamber 12. By providing a radical generating plasma supplying means to the processing chamber, the processing rate is increased. Thus, it would have been obvious to

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one of ordinary skill in the art at the time of the invention to provide the apparatus of Iimuro et al. in view of Arai et al. with a radical generating plasma supplying means as taught by Ishizuka et al. in order to increase the processing rate.

13. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al. (U.S. 5,698,062) in view of Lenz et al. (U.S. 5,534,751) and Hill et al. (U.S. 5,744,049).

The teachings of Sakamoto et al. have been discussed above.

Sakamoto et al. fails to teach a discharge confining ring.

Referring to Figure 11, column 5, lines 52-67, and column 6, lines 35-58, Hill et al. teaches a plasma processing apparatus comprising a discharge confining ring 400 made of conductor material.

Referring to Figure 1 and column 6, lines 8-65, Lenz et al. teaches a plasma processing apparatus comprising a discharge confining ring 30 located to surround the sample 16.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the apparatus of Sakamoto et al. with the discharge confining ring as taught by Hill et al. and Lenz et al. in order to increase the processing rate.

14. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iimuro et al. (Japanese Patent Publication 06-333850) in view of Arai et al. (Japanese Patent Publication 06-338476) as applied to claim 32-33 above, and further in view of Lenz et al. (U.S. 5,534,751) and Hill et al. (U.S. 5,744,049).

The teachings of Iimuro et al. in view of Arai et al. have been discussed above.

Limuro et al. in view of Arai et al. fails to teach a discharge confining ring.

Referring to Figure 11, column 5, lines 52-67, and column 6, lines 35-58, Hill et al. teaches a plasma processing apparatus comprising a discharge confining ring 400 made of conductor material.

Referring to Figure 1 and column 6, lines 8-65, Lenz et al. teaches a plasma processing apparatus comprising a discharge confining ring 30 located to surround the sample 16.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the apparatus of Limuro et al. in view of Arai et al. with the discharge confining ring made of conductor material surrounding the sample as taught by Hill et al. and Lenz et al. in order to increase the processing rate.

15. Claims 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al. (U.S. 5,698,062) in view of Ishii (U.S. 5,529,657).

The teachings of Sakamoto et al. have been discussed above.

Sakamoto et al. fails to teach a susceptible cover.

Referring to Figures 3-6 and column 4, line 49 – column 5, line 12, Ishii teaches a plasma processing apparatus comprising a susceptible cover 6 comprised of carbon or silicon located adjacent to one of the pair of electrodes 31 (col. 4, lines 50-54, col. 5, lines 9-12). The susceptible cover 6 has a thickness of 2 mm (col. 4, lines 63-65). The susceptible cover directs the plasma to the surface of the wafer. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide one of the pair of electrodes of Sakamoto et al. with the susceptible cover as taught by Ishii in order to direct the plasma to the surface of the wafer.

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16. Claims 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iimuro et al. (Japanese Patent Publication 06-333850) in view of Arai et al. (Japanese Patent Publication 06-338476) as applied to claim 32-33 above, and further in view of Ishii (U.S. 5,529,657).

The teachings of Iimuro et al. in view of Arai et al. have been discussed above.

Iimuro et al. in view of Arai et al. fails to teach a susceptible cover.

Referring to Figures 3-6 and column 4, line 49 – column 5, line 12, Ishii teaches a plasma processing apparatus comprising a susceptible cover 6 comprised of carbon or silicon located adjacent to one of the pair of electrodes 31 (col. 4, lines 50-54, col. 5, lines 9-12). The susceptible cover 6 has a thickness of 2 mm (col. 4, lines 63-65). The susceptible cover directs the plasma to the surface of the wafer. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide one of the pair of electrodes of Iimuro et al. in view of Arai et al. with the susceptible cover as taught by Ishii in order to direct the plasma to the surface of the wafer.

17. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto al. (U.S. 5,698,062) in view of Ishizuka et al. (U.S. 5,476,182) as applied to claim 34 above, and further in view of Lenz et al. (U.S. 5,534,751) and Hill et al. (U.S. 5,744,049).

The teachings of Sakamoto et al. in view of Ishizuka et al. have been discussed above.

Sakamoto et al. in view of Ishizuka et al. fails to teach a discharge confining ring.

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Referring to Figure 11, column 5, lines 52-67, and column 6, lines 35-58, Hill et al. teaches a plasma processing apparatus comprising a discharge confining ring 400 made of conductor material.

Referring to Figure 1 and column 6, lines 8-65, Lenz et al. teaches a plasma processing apparatus comprising a discharge confining ring 30 located to surround the sample 16.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the apparatus of Sakamoto et al. in view of Ishizuka et al. with the discharge confining ring as taught by Hill et al. and Lenz et al. in order to increase the processing rate.

18. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iimuro et al. (Japanese Patent Publication 06-333850) in view of Arai et al. (Japanese Patent Publication 06-338476) and Ishizuka et al. (U.S. 5,476,182) as applied to claim 34 above, and further in view of Lenz et al. (U.S. 5,534,751) and Hill et al. (U.S. 5,744,049).

The teachings of Iimuro et al. in view of Arai et al. and Ishizuka et al. have been discussed above.

Iimuro et al. in view of Arai et al. and Ishizuka et al. fails to teach a discharge confining ring.

Referring to Figure 11, column 5, lines 52-67, and column 6, lines 35-58, Hill et al. teaches a plasma processing apparatus comprising a discharge confining ring 400 made of conductor material.

Referring to Figure 1 and column 6, lines 8-65, Lenz et al. teaches a plasma processing apparatus comprising a discharge confining ring 30 located to surround the sample 16.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the apparatus of Iimuro et al. in view of Arai et al. and Ishizuka et al. with the discharge confining ring as taught by Hill et al. and Lenz et al. in order to increase the processing rate.

19. Claims 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al. (U.S. 5,698,062) in view of Ishizuka et al. (U.S. 5,476,182) as applied to claim 34 above, and further in view of Ishii (U.S. 5,529,657).

The teachings of Sakamoto et al. in view of Ishizuka et al. have been discussed above.

Sakamoto et al. in view of Ishizuka et al. fails to teach a susceptible cover.

Referring to Figures 3-6 and column 4, line 49 – column 5, line 12, Ishii teaches a plasma processing apparatus comprising a susceptible cover 6 comprised of carbon or silicon located adjacent to one of the pair of electrodes 31 (col. 4, lines 50-54, col. 5, lines 9-12). The susceptible cover 6 has a thickness of 2 mm (col. 4, lines 63-65). The susceptible cover directs the plasma to the surface of the wafer. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide one of the pair of electrodes of Sakamoto et al. in view of Ishizuka et al. with the susceptible cover as taught by Ishii in order to direct the plasma to the surface of the wafer.

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20. Claims 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iimuro et al. (Japanese Patent Publication 06-333850) in view of Arai et al. (Japanese Patent Publication 06-338476) and Ishizuka et al. (U.S. 5,476,182) as applied to claim 34 above, and further in view of Ishii (U.S. 5,529,657).

The teachings of Iimuro et al. in view of Arai et al. and Ishizuka et al. have been discussed above.

Iimuro et al. in view of Arai et al. and Ishizuka et al. fails to teach a susceptible cover.

Referring to Figures 3-6 and column 4, line 49 – column 5, line 12, Ishii teaches a plasma processing apparatus comprising a susceptible cover 6 comprised of carbon or silicon located adjacent to one of the pair of electrodes 31 (col. 4, lines 50-54, col. 5, lines 9-12). The susceptible cover 6 has a thickness of 2 mm (col. 4, lines 63-65). The susceptible cover directs the plasma to the surface of the wafer. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide one of the pair of electrodes of Iimuro et al. in view of Arai et al. and Ishizuka et al. with the susceptible cover as taught by Ishii in order to direct the plasma to the surface of the wafer.

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Salimian et al teaches a plasma processing apparatus having a plasma generating means and a bias applying means.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle Crowell whose telephone number is (703) 305-1956. The examiner can normally be reached on M-F (8:00 - 4:30).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (703) 308-1633. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

AMC *gme*
July 14, 2003


GREGORY MILLS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700